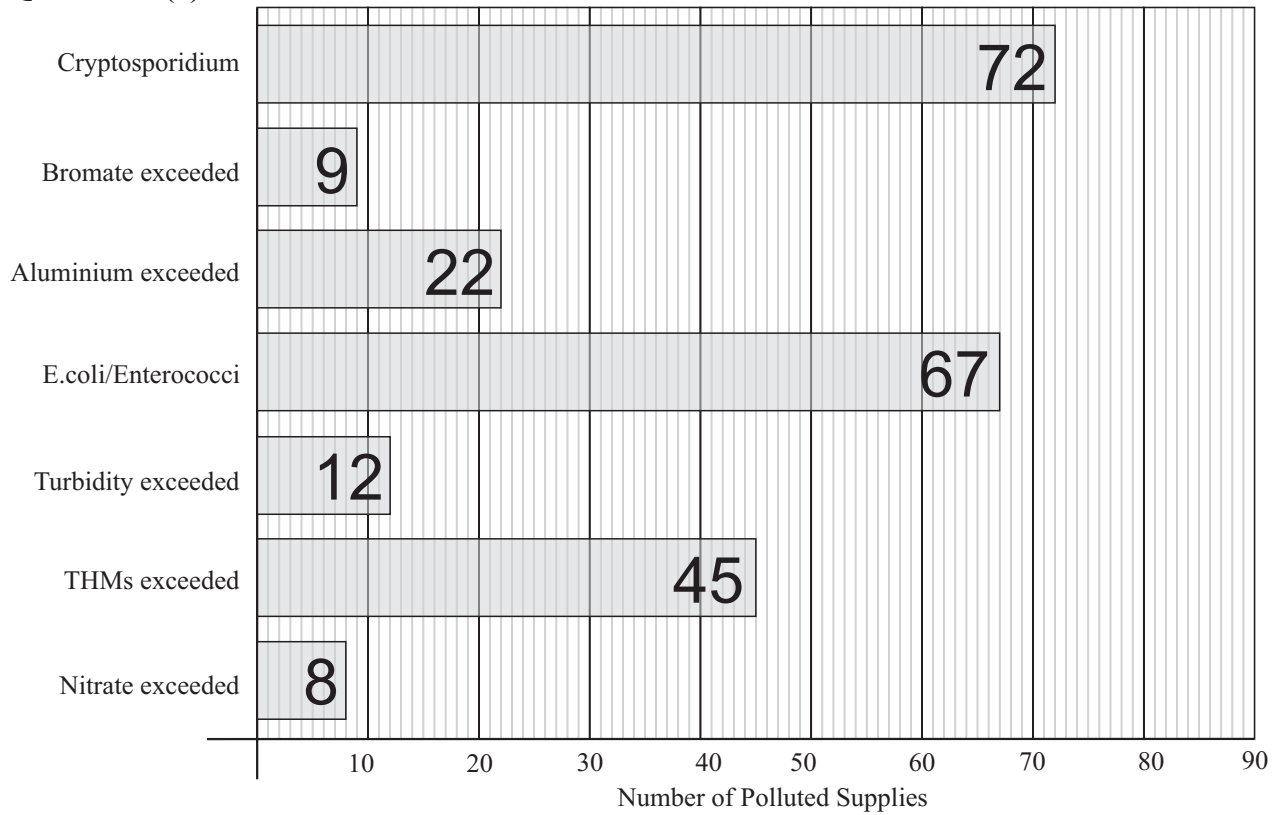


SAMPLE PAPER 2: PAPER 2

QUESTION 7 (45 MARKS)

Question 7 (a)



Maximum number of supplies = $72 + 9 + 22 + 67 + 12 + 45 + 8 = 235$

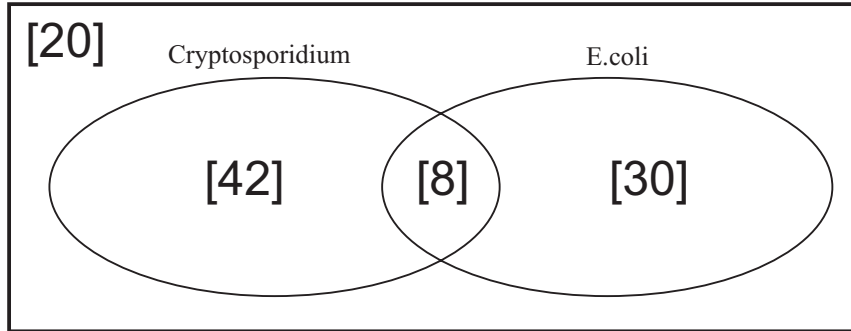
Question 7 (b)

$\frac{72}{300} \times 100\% = 24\%$ [72 water supplies had Cryptosporidium. They may have had other pollutants but they had Cryptosporidium at least.]

Question 7 (c)

The name of the pollutants are too large to put on the horizontal axis, making them much harder to read.

Question 7 (d)



Total number of supplies = 100

Number of unpolluted supplies = 20

Number of polluted supplies = 80

Number of supplies polluted with Cryptosporidium = 50

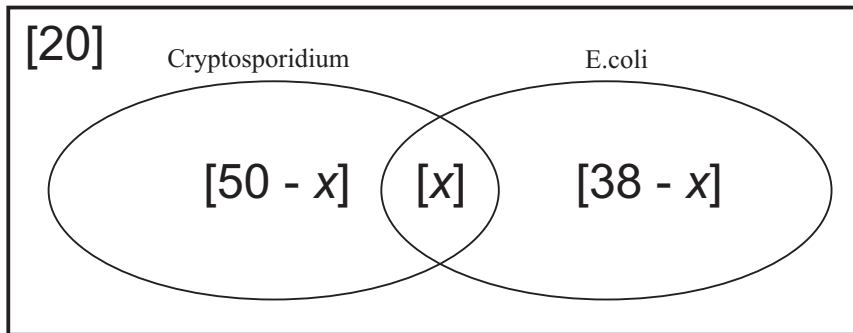
Number of supplies polluted with E.coli = 38

Number of supplies polluted with Cryptosporidium **or** E.coli = 50 + 38 = 88

Number of supplies polluted with Cryptosporidium **and** E.coli = 88 - 80 = 8

OR

[100]



$$50 - x + x + 38 - x + 20 = 100$$

$$108 - x = 100$$

$$108 - 100 = x$$

$$\therefore x = 8$$

Question 7 (e) (i)

$$P(\text{Supply is polluted with Cryptosporidium and E.coli}) = \frac{8}{100} = 0.08 = 8\%$$

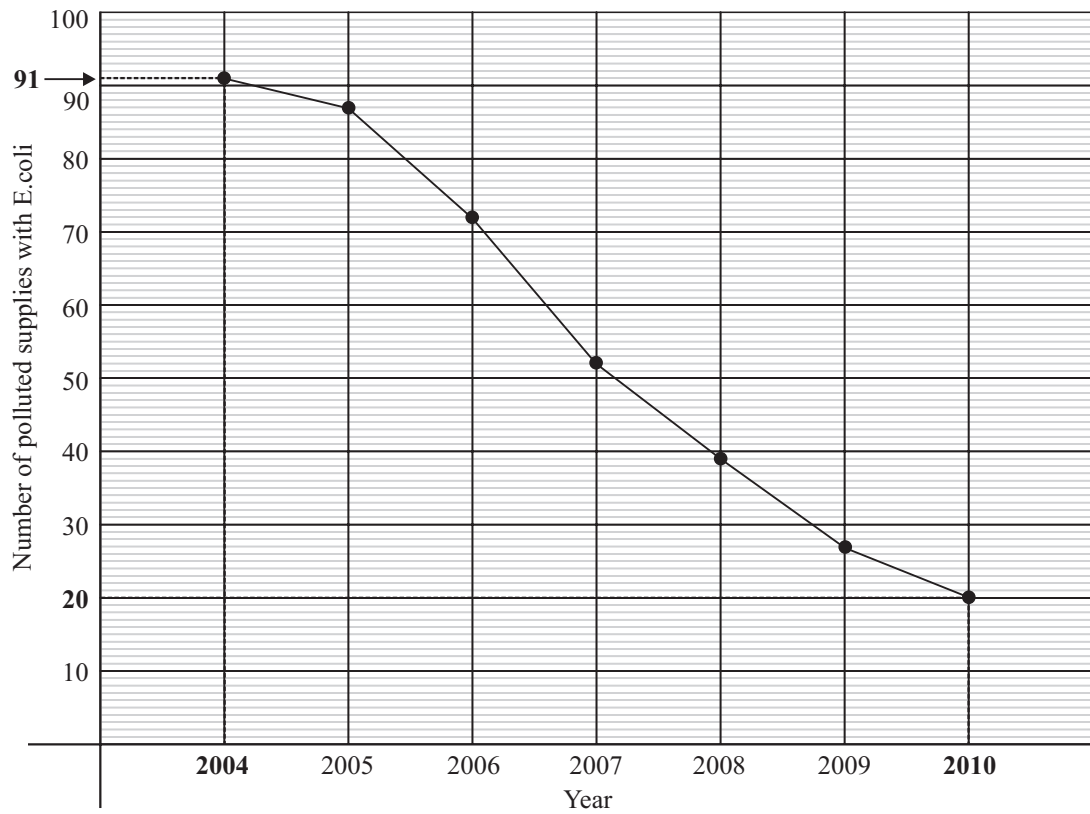
Question 7 (e) (ii)

$$P(\text{Supply is polluted with E.coli only}) = \frac{30}{100} = 0.3 = 30\%$$

Question 7 (f)

$$P(3 \text{ supplies are polluted with Cryptosporidium and E.coli}) = 0.08 \times 0.08 \times 0.08 = \frac{8}{15625}$$

Question 7 (g) (i)



$$\% \text{ of supplies in 2010 which had E.coli} = \frac{20}{945} \times 100\% = 2.12\%$$

Question 7 (g) (ii)

$$\% \text{ decrease in polluted supplies from 2004 to 2010} = \frac{91 - 20}{945} \times 100\% = 7.51\%$$

Question 7 (g) (iii)

Private supplies are inferior in terms of pollution.
